WHAT IS CLAIMED IS:

1. An electronic device for dissipating heat from a heat source, comprising:

a substrate;

a heat sink having at least one mounting pin disposed on the substrate and soldered to the substrate; and

at least one heat producing component, sandwiched between the substrate and the heat sink and thermally bonded to the heat sink.

2. The electronic device of claim 1, wherein the substrate further comprises:

at least one mounting hole therein, wherein the at least one mounting pin is adapted to be disposed through the at least one mounting hole in the substrate, wherein the heat sink is further attached to the substrate by disposing the pin through the hole and soldering the pin to the substrate during the pre-assembly operation.

3. The electronic device of claim 1, wherein the heat sink further comprises:

a thermally conductive plate, wherein the heat producing component has front and back sides, the front side is disposed across from the back side, wherein the thermally conductive plate is coupled to the back side and the substrate is attached to the front side, wherein the at least one pin extends beyond the plate such that at least one pin can be soldered to the substrate when the thermally conductive plate is coupled to the back side of the heat producing component.

4. The electronic device of claim 2, wherein the heat sink further comprises:

a heat exchange portion, wherein the heat exchange portion extends beyond the plate and is disposed across from the heat producing component.

5. The electronic device of claim 3, wherein the heat exchange portion comprises:

multiple fins extending away from the plate.

6. The electronic device of claim 3, further comprising:

a thermal interface material disposed between the heat sink and the back side of the heat producing component to reduce thermal resistance between the back side of the heat producing component and the heat sink.

7. The electronic device of claim 6, wherein the thermal interface material is selected from the group consisting of phase change thermal interface material and thermal grease.

8. The electronic device of claim 3, wherein the substrate attached to the front side comprises:

electrically and/or mechanically coupling the front side to the substrate.

9. The system of claim 1, wherein the heat sink is made from a material selected from the group consisting of copper, aluminum, and other such materials suitable for dissipating heat away from the heat source.

10. The system of claim 1, wherein the heat producing component is an integrated circuit device selected from the group consisting of a chipset, a microprocessor, a digital signal processor, and an application-specific integrated circuit device.

11. The system of claim 1, wherein the substrate is a printed circuit board.

12. The system of claim 1, wherein soldering the at least one pin in the at least one hole to enhance heat dissipation from the heat sink, comprises:

wave soldering the at least one pin disposed in the corresponding at least one hole in the substrate to mechanically couple the heat sink to the substrate during the pre-assembly operation to dissipate heat from the heat producing component.

13. A method of assembling an electronic device, comprising:

mounting a heat producing component to a substrate;

positioning a layer of thermal interface material on to the heat producing component such that the thermal interface material is disposed on the substrate;

aligning a heat sink including the at least one mounting pin over the thermal interface material such that the thermal interface material is sandwiched between the heat producing component and the heat sink, and further the at least one pin is disposed over the substrate for soldering the at least one pin to the substrate;

reducing the viscosity of the thermal interface material by preheating the thermal interface material in a wave soldering preheater to cause the thermal interface material to wet the component to thermally couple the heat sink to the heat producing component; and

attaching the sink in a fixed position on the heat producing component and the substrate by soldering the at least one pin onto the substrate while the thermal interface material is still hot.

14. The method of 13, wherein the reducing the viscosity of the thermal interface material further comprises:

loading the substrate including the heat producing component, thermal interface material, and the heat sink on to a conveyor of a wave soldering machine; and

preheating the thermal interface material in the preheater of the wave soldering machine to cause the thermal interface material to wet the component.

15. The method of claim 14, further comprising:

cooling the soldered pin to mechanically fix the heat sink in place and to further lock in the thermal coupling established between the heat producing component and the heat sink during the pre-heating.

16. The method of claim 13, wherein the substrate comprises:

at least one hole therein, wherein the at least one pin is disposed through the corresponding hole in the substrate for wave soldering the pin to the substrate.

17. The method of claim 16, wherein soldering the pins onto the substrate comprises:

wave soldering the at least one pin to the substrate to mechanically attach the heat sink to the substrate, and to further lock in the thermal coupling established between the heat producing component and the heat sink while the thermal interface material is still hot.

18. The method of claim 16, further comprising:

forming the heat sink including a thermally conductive plate such that the at least one pin extends beyond the plate.

19. The method of claim 18, wherein forming the heat sink further comprises:

forming a heat exchange portion such that the heat exchange portion extends beyond the plate and across from the heat producing component.

20. The method of claim 19, wherein forming the heat exchange portion comprises:

forming multiple fins extending away from the plate.

21. The method of claim 13, wherein the heat sink is made from a material selected from the group consisting of copper, aluminum, and other such materials suitable for dissipating heat away from the heat source.

22. The method of claim 13, wherein the thermal interface material capable of melting at wave soldering pre-heat temperatures is selected from the group consisting of a phase change thermal interface material and a thermal grease.

23. The method of claim 22, wherein mounting the heat producing component to the substrate, comprises:

electrically and/or mechanically coupling the heat producing component to the substrate.

24. The method of claim 13, wherein the heat producing component is an integrated circuit device selected from the group consisting of a chipset, a microprocessor, a digital signal processor, and an application-specific integrated circuit device.

25. A method of assembling an electronic device, comprising:

mounting a heat producing component to a substrate having at least one mounting hole therein;

aligning a heat sink having at least one mounting pin to the substrate with each of the mount pins inserted into a mounting hole;

positioning a thermal interface material between the heat producing component and the heat sink; and

reducing the viscosity of the thermal interface material and securing the heat sink in a fixed position on the substrate by exposing the device to a wave soldering process to cause the thermal interface material to wet and thermally bond the heat sink and the heat producing component and to further solder the at least one pin to the at least one mounting hole.

26. The method of claim 25, further comprising:

forming the heat sink including a thermally conductive plate such that the at least one pin extends beyond the plate.

27. The method of claim 26, wherein forming the heat sink further comprises:

forming a heat exchange portion such that the heat exchange portion extends beyond the plate and across from the heat producing component.

28. The method of claim 27, wherein the heat sink is made from a material selected from the group consisting of copper, aluminum, and other such materials suitable for dissipating heat away from the heat source.

29. The method of claim 25, wherein the thermal interface material capable of melting at wave soldering pre-heat temperatures is selected from the group consisting of a phase change thermal interface material and a thermal grease.

30. The method of claim 25, wherein the heat producing component is an integrated circuit device selected from the group consisting of a chipset, a microprocessor, a digital signal processor, and an application-specific integrated circuit device.